

STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley **TDEC-WPC**

Knoxville FO

3711 Middlebrook Pike

Knoxville, TN 37921

K00003038 Lab ID:

Knoxville Regional Laboratory

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Aralytical Supervisor

K00003038001

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: Date/Time Collected: EMORY012.1RO

Sampler's Name:

10/27/2009 11:47 Geoff Klein

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC **TDEC-WPC** 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Priority Date:

Ken Hitchman

Field Determinations

pH:

7.63

pH Units

uMHO

Chlorine, residual:

Conductivity:

57

12.77

mg/L

Temperature: Dissolved Oxygen: 11.25

Other:

Flow: CFS

TEST: Digestion Metals METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/28/2009				A Wilson	10/28/2009

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	200	μg/L	2.9	10	A Wilson	10/30/2009

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	69	μg/L	6.4	10	M Pattanayek	10/29/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/29/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	10/29/2009
Barium	29	μg/L	2.5	5	M Pattanayek	10/29/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/29/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/29/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/29/2009
Cobalt	0.29J	μg/L	0.04	1	M Pattanayek	10/29/2009
Copper	U	μg/L	0.38	1	M Pattanayek	10/29/2009
Lead	0.11J	μg/L	0.10	1	M Pattanayek	10/29/2009
Manganese	160	μg/L	0.42	1	M Pattanayek	10/29/2009
Nickel	1.2	μg/L	0.25	1	M Pattanayek	10/29/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/29/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/29/2009
Thallium	0.14J	μg/L	0.03	1	M Pattanayek	10/29/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/29/2009
Zinc	U	μg/L	1.9	5	M Pattanayek	10/29/2009

K00003038001

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 12.1

Project Site No.:

Station No.:

EMORY012.1RO

Date/Time Collected:

10/27/2009 11:47

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: Agency Invoiced: 327.34-20 **TDEC-WPC** TDEC-WPC

Priority Date:

11/06/2009

Date/Time Received:

10/27/2009 12:55

RESU

U

Received By:

TEST: Mercury

ANALYTE

Mercury

Ken Hitchman

MET	THOD: EPA 24	5.1			
JLT	UNITS	MDL	MQL	ANALYZED BY:	DATE
	μg/L	0.029	0.2	A Bass	11/3/2009

Field Determinations

Dissolved Oxygen: 11.25

Chlorine, residual:

Conductivity:

Temperature:

7.63

12.77

57

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00003038002

Project Name:

TVA-Ash Spill

Sample Description: Sampler Project Name: TVA Ash Spill

Emory River mile 2.1

Project Site No.:

2

Station No.:

EMORY002.1RO

Date/Time Collected:

10/27/2009 09:58

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

Field Determinations

:Hq

8.34

pH Units

uMHO

Chlorine, residual:

Conductivity:

54

12.37

Temperature: **Dissolved Oxygen: 11.3**

mg/L

Other:

Flow:

CFS

TEST: Digestion Metals METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/28/2009		·		A Wilson	10/28/2009

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	340	μg/L	2.9	10	A Wilson	10/30/2009

TEST: ICP-MS	ME:	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	400	μg/L	6.4	10	M Pattanayek	10/29/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/29/2009
Arsenic	2.6J	μg/L	0.93	5	M Pattanayek	10/29/2009
Barium	35	μg/L	2.5	5	M Pattanayek	10/29/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/29/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/29/2009
Chromium	· U	μg/L	2.0	5	M Pattanayek	10/29/2009
Cobalt	0.37J	μg/L	0.04	1	M Pattanayek	10/29/2009
Copper	1.1	μg/L	0.38	1	M Pattanayek	10/29/2009
Lead	0.55J	μg/L	0.10	1	M Pattanayek	10/29/2009
Manganese	64	μg/L	0.42	1	M Pattanayek	10/29/2009
Nickel	1.5	μg/L	0.25	1	M Pattanayek	10/29/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/29/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/29/2009
Thallium	0.12J	μg/L	0.03	1	M Pattanayek	10/29/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/29/2009
Zinc	· U	μg/L	1.9	5	M Pattanayek	10/29/2009

K00003038002

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY002.1RO

Date/Time Collected:

10/27/2009 09:58

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date: Date/Time Received:

11/06/2009 10/27/2009 12:55

Received By:

Ken Hitchman

Field Determinations

pH:

8.34

pH Units

uMHO

Chlorine, residual:

Conductivity: Temperature:

54

12.37

Dissolved Oxygen: 11.3

mg/L

Other:

Flow:

CFS

TEST: Mercury	ME	THOD: EPA 24				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	11/3/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00003038003

Project Name:

TVA-Ash Spill

Sample Description:

Approx 100' downstream from middle dredge pc Chlorine, residual:

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

2A

Dredge Plume

Date/Time Collected: Sampler's Name:

10/27/2009 10:10

County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency: Billing Code:

Knoxville **TDEC-WPC** 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Priority Date:

Ken Hitchman

Field Determinations 8.02

pH:

Conductivity:

54

uMHO

pH Units

Temperature:

12.76

Dissolved Oxygen: 11.65

mg/L

Other: Flow:

CFS

TEST: Digestion Metals	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/28/2009				A Wilson	10/28/2009

TEST: ICP	EST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	260	μg/L	2.9	10	A Wilson	10/30/2009	

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	200	μg/L	6.4	10	M Pattanayek	10/29/2009
Antimony	0.50J	μg/L	0.33	1	M Pattanayek	10/29/2009
Arsenic	1.3J	μg/L	0.93	5	M Pattanayek	10/29/2009
Barium	30	μg/L	2.5	5	M Pattanayek	10/29/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/29/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/29/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/29/2009
Cobalt	0.25J	μg/L	0.04	1	M Pattanayek	10/29/2009
Copper	0.38J	μg/L	0.38	1	M Pattanayek	10/29/2009
Lead	0.31J	μg/L	0.10	1	M Pattanayek	10/29/2009
Manganese	59	μg/L	0.42	1	M Pattanayek	10/29/2009
Nickel	1.1	μg/L	0.25	1	M Pattanayek	10/29/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/29/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/29/2009
Thallium	0.06J	μg/L	0.03	1	M Pattanayek	10/29/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/29/2009
Zinc	U	μg/L	1.9	5	M Pattanayek	10/29/2009

K00003038003

Project Name:

TVA-Ash Spill

pH:

Other:

Flow:

Field Determinations

Dissolved Oxygen: 11.65

Conductivity:

Temperature:

8.02

54

12.76

pH Units

uMHO

mg/L

CFS

Sample Description:

Approx 100' downstream from middle dredge pc Chlorine, residual:

Sampler Project Name: TVA Ash Spill

Project Site No.:

2A

Station No.: Dredge Plume

Date/Time Collected: Sampler's Name:

10:10 10/27/2009

County:

Geoff Klein **ROANE - 73**

Sample Matrix: EFO:

Water

Sampling Agency: Billing Code:

Knoxville TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: **Agency Invoiced: Priority Date:**

TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	11/3/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit **MQL - Method Quantitation Limit**

Lab-Sample Number: **Project Name:**

K00003038004

TVA-Ash Spill

Sample Description: Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: EMORY001.9RO **Date/Time Collected:**

Sampler's Name:

10:18 10/27/2009 Geoff Klein

County: Sample Matrix: **ROANE - 73**

EFO: Sampling Agency: Water Knoxville TDEC-WPC 327.34-20

Billing Code: Send Report To: Agency Invoiced: Priority Date:

TDEC-WPC TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

Field Determinations

pH: 7.79

Chlorine, residual:

57

pH Units **uMHO**

Conductivity: Temperature:

12.63

mg/L

Dissolved Oxygen: 11.35 Other:

Flow:

CFS

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/28/2009				A Wilson	10/28/2009

TEST: ICP	METHOD: EPA 200.7							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Iron	440	μg/L	2.9	10	A Wilson	10/30/2009		

TEST: ICP-MS	MET	THOD: EPA 200	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	800	μg/L	6.4	10	M Pattanayek	10/29/2009
Antimony	0.55J	μg/L	0.33	1	M Pattanayek	10/29/2009
Arsenic	9.1	μg/L	0.93	5	M Pattanayek	10/29/2009
Barium	54	μg/L	2.5	5	M Pattanayek	10/29/2009
Beryllium	0.15J	μg/L	0.11	1	M Pattanayek	10/29/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/29/2009
Chromium	2.4J	μg/L	2.0	5	M Pattanayek	10/29/2009
Cobalt	0.63J	μg/L	0.04	1	M Pattanayek	10/29/2009
Copper	2.1	μg/L	0.38	1	M Pattanayek	10/29/2009
Lead	1.1	μg/L	0.10	1	M Pattanayek	10/29/2009
Manganese	64	μg/L	0.42	1	M Pattanayek	10/29/2009
Nickel	2.2	μg/L	0.25	1	M Pattanayek	10/29/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/29/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/29/2009
Thallium	0.13J	μg/L	0.03	1	M Pattanayek	10/29/2009
Vanadium	6.8	μg/L	3.4	5	M Pattanayek	10/29/2009
Zinc	4.7J	μg/L	1.9	5	M Pattanayek	10/29/2009

K00003038004

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.: Station No.:

EMORY001.9RO

Date/Time Collected:

10/27/2009 10:18

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency: Billing Code:

TDEC-WPC 327.34-20

Send Report To: **Agency Invoiced:** TDEC-WPC TDEC-WPC

Priority Date: Date/Time Received: 11/06/2009 10/27/2009 12:55

Received By:

Ken Hitchman

Field Determinations

:Hq

7.79

pH Units

Chlorine, residual:

Conductivity:

57

uMHO

Temperature: Dissolved Oxygen: 11.35

12.63

mg/L

Other:

Flow:

CFS

TEST: Mercury	ME	THOD: EPA 24	5.1			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	11/3/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003038005

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY001.7RO

Date/Time Collected:

10/27/2009 10:30

Sampler's Name: County:

Geoff Klein **ROANE - 73**

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 **TDEC-WPC**

Agency invoiced: **Priority Date:**

TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

Field Determinations

pH:

7.56

pH Units

Chlorine, residual:

Conductivity:

57

uMHO

Temperature: 13.11 **Dissolved Oxygen: 11.49**

Other:

Flow:

CFS

mg/L

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/28/2009				A Wilson	10/28/2009

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	340	μg/L	2.9	10	A Wilson	10/27/2009	

TEST: ICP-MS	ME	THOD: EPA 20	0.8	•••		
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	470	μg/L	6.4	10	M Pattanayek	10/29/2009
Antimony	0.36J	μg/L	0.33	1	M Pattanayek	10/29/2009
Arsenic	4.6J	μg/L	0.93	5	M Pattanayek	10/29/2009
Barium	42	μg/L	2.5	5	M Pattanayek	10/29/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/29/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/29/2009
Chromium	Ú	μg/L	2.0	5	M Pattanayek	10/29/2009
Cobalt	0.42J	μg/L	0.04	1	M Pattanayek	10/29/2009
Copper	1.2	μg/L	0.38	1	M Pattanayek	10/29/2009
Lead	0.67J	μg/L	0.10	1	M Pattanayek	10/29/2009
Manganese	64	μg/L	0.42	1	M Pattanayek	10/29/2009
Nickel	1.6	μg/L	0.25	1	M Pattanayek	10/29/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/29/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/29/2009
Thallium	0.08J	μg/L	0.03	1	M Pattanayek	10/29/2009
Vanadium	3.6J	μg/L	3.4	5	M Pattanayek	10/29/2009
Zinc	2.4J	μg/L.	1.9	5	M Pattanayek	10/29/2009

K00003038005

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY001.7RO

Date/Time Collected:

10/27/2009 10:30

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	11/3/2009

Field Determinations

Dissolved Oxygen: 11.49

Chlorine, residual:

Conductivity:

Temperature:

7.56

57

13.11

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003038006

Project Name:

TVA-Ash Spill Emory River mile 0.1

Sample Description: Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: EMORY000.1RO 10/27/2009 10:45 **Date/Time Collected:**

Sampler's Name:

Geoff Klein

County: Sample Matrix: **ROANE - 73** Water

EFO: Sampling Agency: Knoxville TDEC-WPC 327.34-20

Billing Code: Send Report To: **Agency Invoiced:**

TDEC-WPC TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Priority Date:

Ken Hitchman

Field Determinations

pH: 7.52

Chlorine, residual:

Conductivity:

86 13.47 **uMHO**

mg/L

pH Units

Temperature:

Dissolved Oxygen: 10.65

Other:

Flow: **CFS**

TEST: Digestion Metals	on Metals METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/28/2009				A Wilson	10/28/2009

EST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	230	μg/L	2.9	10	A Wilson	10/30/2009

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	230	μg/L	6.4	10	M Pattanayek	10/29/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/29/2009
Arsenic	2.2J	μg/L	0.93	5	M Pattanayek	10/29/2009
Barium	37	μg/L	2.5	5	M Pattanayek	10/29/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/29/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/29/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/29/2009
Cobalt	0.23J	μg/L	0.04	1	M Pattanayek	10/29/2009
Copper	0.64J	μg/L	0.38	1	M Pattanayek	10/29/2009
Lead	0.38J	μg/L	0.10	1	M Pattanayek	10/29/2009
Manganese	45	μg/L	0.42	1	M Pattanayek	10/29/2009
Nickel	1.2	μg/L	0.25	1	M Pattanayek	10/29/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/29/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/29/2009
Thallium	0.05J	μg/L	0.03	1	M Pattanayek	10/29/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/29/2009
Zinc	2.5J	μg/L	1.9	5	M Pattanayek	10/29/2009

K00003038006

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY000.1RO

Date/Time Collected:

10/27/2009 10:45

Sampler's Name: County:

Geoff Klein **ROANE - 73**

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: Agency Invoiced: 327.34-20 **TDEC-WPC** TDEC-WPC

11/06/2009

Priority Date: Date/Time Received:

10/27/2009 12:55

Received By:

TEST: Mercury

Ken Hitchman

ME.	THOD:	EPA	245.1	

Field Determinations

Dissolved Oxygen: 10.65

Chlorine, residual:

Conductivity:

Temperature:

7.52

13.47

86

pH Units

uMHO

mg/L

CFS

:Hq

Other:

Flow:

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	11/3/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003038007 TVA-Ash Spill

Project Name: Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: Date/Time Collected: CLINC002.3RO 10/27/2009 11:03

Sampler's Name: County:

Geoff Klein **ROANE - 73**

Sample Matrix: EFO:

Water

Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC 327.34-20

Send Report To: Agency invoiced: **Priority Date:**

TDEC-WPC TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

Field Determinations

pH:

7.58

pH Units

Chlorine, residual:

Conductivity:

202

uMHO

Temperature: 14.01

Dissolved Oxygen: 9.44

mg/L

Other:

Flow: **CFS**

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	10/28/2009				A Wilson	10/28/2009	

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	150	μg/L	2.9	10	A Wilson	10/30/2009

TEST: ICP-MS	WE.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	190	μg/L	6.4	10	M Pattanayek	10/29/2009
Antimony	0.61J	μg/L	0.33	1	M Pattanayek	10/29/2009
Arsenic	2.7J	μg/L	0.93	5	M Pattanayek	10/29/2009
Barium	38	μg/L	2.5	5	M Pattanayek	10/29/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/29/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/29/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/29/2009
Cobalt	0.19J	μg/L	0.04	1	M Pattanayek	10/29/2009
Copper	0.69J	μg/L	0.38	1	M Pattanayek	10/29/2009
Lead	0.27J	μg/L	0.10	1	M Pattanayek	10/29/2009
Manganese	36	μg/L	0.42	1	M Pattanayek	10/29/2009
Nickel	1.2	μg/L	0.25	1	M Pattanayek	10/29/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/29/2009
Silver	Ů	μg/L	0.03	0.25	M Pattanayek	10/29/2009
Thallium	0.06J	μg/L	0.03	1 .	M Pattanayek	10/29/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/29/2009
Zinc	U	μg/L	1.9	5	M Pattanayek	10/29/2009

K00003038007

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

CLINC002.3RO

Date/Time Collected:

10/27/2009 11:03

Sampler's Name: **County:**

Geoff Klein **ROANE - 73**

Sample Matrix:

EFO: Sampling Agency: Water Knoxville

Billing Code:

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced: **Priority Date:**

TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

TEST: Mercury	METHOD: EPA 245.1						
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY: DAT						
Mercury	U	μg/L	0.029	0.2	A Bass	11/3/2009	

Field Determinations

Dissolved Oxygen: 9.44

Chlorine, residual:

Conductivity:

Temperature:

7.58

202

14.01

pH Units

uMHO

mg/L

CFS

:Hq

Other:

Flow:

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003038008

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

Project Site No.:

5-FD

Station No.:

CLINC002.3RO-FD

Date/Time Collected: Sampler's Name:

10/27/2009 11:03

County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC

Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC **TDEC-WPC**

Priority Date:

11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

TEST: Digestion Metals						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/28/2009				A Wilson	10/28/2009

Field Determinations

Dissolved Oxygen: 9.44

Chlorine, residual: Conductivity:

Temperature:

7.58

202

14.01

pH Units

uMHO

mg/L

CFS

pH:

Other: Flow:

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	170	μg/L	2.9	10	A Wilson	10/30/2009

TEST: ICP-MS	MET	THOD: EPA 20	0.8	*		
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	240	μg/L	6.4	10	M Pattanayek	10/29/2009
Antimony	0.59J	μg/L	0.33	1	M Pattanayek	10/29/2009
Arsenic	3.9J	μg/L	0.93	5	M Pattanayek	10/29/2009
Barium	46	μg/L	2.5	5	M Pattanayek	10/29/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/29/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/29/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/29/2009
Cobalt	0.27J	μg/L	0.04	1	M Pattanayek	10/29/2009
Copper	0.94J	μg/L	0.38	1	M Pattanayek	10/29/2009
Lead	0.34J	μg/L	0.10	1	M Pattanayek	10/29/2009
Manganese	44	μg/L	0.42	1	M Pattanayek	10/29/2009
Nickel	1.5	μg/L	0.25	1	M Pattanayek	10/29/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/29/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/29/2009
Thallium	0.06J	μg/L	0.03	1	M Pattanayek	10/29/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/29/2009
Zinc	U	μg/L	1.9	5	M Pattanayek	10/29/2009

K00003038008

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

Project Site No.:

5-FD

Station No.:

CLINC002.3RO-FD

Date/Time Collected:

10/27/2009 11:03

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 **TDEC-WPC**

Agency Invoiced: **Priority Date:**

TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

Field Determinations

pH:

7.58

pH Units

Chlorine, residual:

Conductivity:

202

uMHO

mg/L

Temperature: 14.01 **Dissolved Oxygen: 9.44**

Other:

Flow:

CFS

TEST: Mercury	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	11/3/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003038009

Project Name: Sample Description: TVA-Ash Spill Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

Project Site No.:

5-FB

Station No.:

CLINC002.3RO-FB

Date/Time Collected:

11:03 10/27/2009

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: **Priority Date:**

TDEC-WPC TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other: Flow:

CFS

TEST: Digestion Metals	MET					
ANALYTE	RESULT	UNITS	MDL MQL		ANALYZED BY:	DATE
Digestion Metals	10/28/2009				A Wilson	10/28/2009

TEST: ICP	ME					
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY:					
Iron	U	μg/L	2.9	10	A Wilson	10/30/2009

TEST: ICP-MS	ME:	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	U	μg/L	6.4	10	M Pattanayek	10/29/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/29/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	10/29/2009
Barium	U	μg/L	2.5	5	M Pattanayek	10/29/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/29/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/29/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/29/2009
Cobalt	U	μg/L	0.04	1	M Pattanayek	10/29/2009
Copper	U	μg/L	0.38	1	M Pattanayek	10/29/2009
Lead	U	μg/L	0.10	1	M Pattanayek	10/29/2009
Manganese	U	μg/L	0.42	1	M Pattanayek	10/29/2009
Nickel	U	μg/L	0.25	1	M Pattanayek	10/29/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/29/2009
Silver	Ü	μg/L	0.03	0.25	M Pattanayek	10/29/2009
Thallium	Ü	μg/L	0.03	1	M Pattanayek	10/29/2009
Vanadium	Ü	μg/L	3.4	5	M Pattanayek	10/29/2009
Zinc	Ü	μg/L	1.9	5	M Pattanayek	10/29/2009

K00003038009

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

Project Site No.:

5-FB

Station No.:

Date/Time Collected:

CLINC002.3RO-FB 11:03 10/27/2009

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency: Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Priority Date:

Ken Hitchman

Other:

Field Determinations

Chlorine, residual:

Dissolved Oxygen:

Conductivity:

Temperature:

Flow:

pH:

CFS

TEST: Mercury	ME					
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY:					
Mercury	U	μg/L	0.029	0.2	A Bass	11/3/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003038010

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA discharge point

Sampler Project Name: TVA Ash Spill

Project Site No.:

5A

Station No.: Date/Time Collected: KingAshOutF2 10/27/2009 11:20

Sampler's Name:

Geoff Klein

County: Sample Matrix: **ROANE - 73**

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: **Agency Invoiced:** 327.34-20 TDEC-WPC TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Priority Date:

Ken Hitchman

Field Determinations

pH:

7.67

pH Units

uMHO

Chlorine, residual:

Conductivity: Temperature:

65

12.95

Dissolved Oxygen: 11.85

mg/L

Other:

Flow:

CFS

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	10/28/2009				A Wilson	10/28/2009	

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	270	μg/L	2.9	10	A Wilson	10/30/2009	

TEST: ICP-MS	ME ⁻					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	390	μg/L	6.4	10	M Pattanayek	10/29/2009
Antimony	1.2	μg/L	0.33	1	M Pattanayek	10/29/2009
Arsenic	9.7	μg/L	0.93	5	M Pattanayek	10/29/2009
Barium	41	μg/L	2.5	5	M Pattanayek	10/29/2009
Beryllium	υ	μg/L	0.11	1	M Pattanayek	10/29/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/29/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/29/2009
Cobalt	0.31J	μg/L	0.04	1	M Pattanayek	10/29/2009
Copper	2.0	μg/L	0.38	1	M Pattanayek	. 10/29/2009
Lead	0.46J	μg/L	0.10	1	M Pattanayek	10/29/2009
Manganese	57	μg/L	0.42	1	M Pattanayek	10/29/2009
Nickel	1.4	μg/L	0.25	1	M Pattanayek	10/29/2009
Selenium	2.1J	μg/L	1.3	5	M Pattanayek	10/29/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/29/2009
Thallium	0.09J	μg/L	0.03	1	M Pattanayek	10/29/2009
Vanadium	10	μg/L	3.4	5	M Pattanayek	10/29/2009
Zinc	2.3J	μg/L	1.9	5	M Pattanayek	10/29/2009

K00003038010

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA discharge point

Sampler Project Name: TVA Ash Spill

Project Site No.:

5A

Station No.:

KingAshOutF2

Date/Time Collected:

10/27/2009 11:20

Sampler's Name:

Geoff Klein

County: Sample Matrix: **ROANE - 73**

EFO:

Water

Sampling Agency:

Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

Field Determinations

pH:

7.67

pH Units

Chlorine, residual:

Conductivity:

65

uMHO

Temperature:

12.95 Dissolved Oxygen: 11.85

mg/L

Other:

Flow:

CFS

TEST: Mercury	METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	U	μg/L	0.029	0.2	A Bass	11/3/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003038011

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

CLINC004.5RO

Date/Time Collected:

10/27/2009 10:50

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced: **Priority Date:**

TDEC-WPC 11/06/2009

Date/Time Received:

TEST: Digestion Metals

10/27/2009 12:55

Received By:

ANALYTE

Ken Hitchman

METHOD: EPA 200.2								
RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE			

Field Determinations

Dissolved Oxygen: 9.76

Conductivity:

Temperature:

7.39

222

14.13

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

A Wilson 10/28/2009 10/28/2009 **Digestion Metals**

TEST: ICP	MET	THOD: EPA 20	0.7			·
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	110	μg/L	2.9	10	A Wilson	10/30/2009

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	110	μg/L	6.4	10	M Pattanayek	10/29/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/29/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	10/29/2009
Barium	41	μg/L	2.5	5	M Pattanayek	10/29/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/29/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/29/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/29/2009
Cobalt	0.17J	μg/L	0.04	1	M Pattanayek	10/29/2009
Copper	0.42J	μg/L	0.38	1	M Pattanayek	10/29/2009
Lead	0.22J	μg/L	0.10	1	M Pattanayek	10/29/2009
Manganese	35	μg/L	0.42	1	M Pattanayek	10/29/2009
Nickel	1.4	μg/L	0.25	1	M Pattanayek	10/29/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/29/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/29/2009
Thallium	0.03J	μg/L	0.03	1	M Pattanayek	10/29/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/29/2009
Zinc	U .	μg/L	1.9	5	M Pattanayek	10/29/2009

K00003038011

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley F Chlorine, residual:

Field Determinations

Dissolved Oxygen: 9.76

Conductivity:

Temperature:

7.39

222

14.13

pH Units

uMHO

mg/L

CFS

pH:

Other: Flow:

Sampler Project Name: TVA Ash Spill **Project Site No.:**

Station No.: CLINC004.5RO **Date/Time Collected:**

Sampler's Name:

10/27/2009 10:50 Geoff Klein

County: Sample Matrix: **ROANE - 73**

EFO:

Water

Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced: **Priority Date:**

TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

TEST: Mercury METHOD: EPA 245.1							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	U	μg/L	0.029	0.2	A Bass	11/3/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit



STATE OF TENNESSEE DEPARTMENT OF HEALTH ENVIRONMENTAL LABORATORIES

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201 TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley

TDEC-WPC Knoxville FO

3711 Middlebrook Pike Knoxville, TN 37921 Lab ID:

K00003038

Knoxville Regional Laboratory

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code: 3

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

K00003038001

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY012.1RO

Date/Time Collected:

10/27/2009 11:47

Sampler's Name: County:

Geoff Klein ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: **Agency Invoiced:** 327.34-20 TDEC-WPC TDEC-WPC

Priority Date: Date/Time Received: 11/06/2009 10/27/2009

Received By:

12:55

Ken Hitchman

Field Determinations

pH:

7.63

pH Units

Chlorine, residual:

Conductivity:

57

uMHO

Temperature:

12.77 **Dissolved Oxygen: 11.25**

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2							
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY:					DATE		
Total Alkalinity	20	mg/L	3.8	10	M Chen	11/3/2009		

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	19	mg/L	0.7	. 1	M Chen	11/2/2009	

TEST: Residue, Settleable METHOD: SM 2540F						
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY:					
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/28/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT UNITS MDL		MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/30/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit **MQL - Method Quantitation Limit**

K00003038002

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY002.1RO

Date/Time Collected: Sampler's Name:

10/27/2009 09:58

County:

Geoff Klein **ROANE - 73**

Sample Matrix:

Water

EFO: **Sampling Agency:** Knoxville TDEC-WPC 327.34-20

Billing Code: Send Report To: Agency Invoiced: **Priority Date:**

TDEC-WPC TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

TEST: Alkalinity, Total	METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	20	mg/L	3.8	10	M Chen	11/3/2009	

Field Determinations

Chlorine, residual: Conductivity:

Dissolved Oxygen: 11.3

Temperature:

8.34

54

12.37

pH Units

uMHO

mg/L

CFS

:Ha

Other:

Flow:

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D							METHOD: SM 3500-Ca D		
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY: DATI					DATE				
Calcium hardness	18	mg/L	0.7	1	M Chen	11/2/2009				

TEST: Residue, Settleable	WE	METHOD: SM 2540F				
ANALYTE	RESULT UNITS MDL		MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/28/2009

TEST: Residue, Suspended	ME					
ANALYTE	RESULT UNITS MDL		MQL	ANALYZED BY:	DATE	
Total Suspended Solids	14	mg/L	10	10	A Peeples	10/30/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003038003

Project Name:

pH:

Field Determinations 8.02

pH Units

Sample Description:

TVA-Ash Spill

Approx 100' downstream from middle dredge pc Chlorine, residual:

Sampler Project Name: TVA Ash Spill

10:10

uMHO

Project Site No.:

Conductivity:

54

Station No.:

2A

Temperature:

Date/Time Collected:

Dredge Plume

12.76 Dissolved Oxygen: 11.65

mg/L

Sampler's Name:

10/27/2009 Geoff Klein

Other: Flow:

CFS

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: **Agency Invoiced:**

TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Priority Date:

Ken Hitchman

TEST: Alkalinity, Total	Alkalinity, Total METHOD: EPA 310.2						
ANALYTE	RESULT UNITS MDL		MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	18	mg/L	3.8	10	M.Chen	11/3/2009	

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	18	mg/L	0.7	1	M Chen	11/2/2009

TEST: Residue, Settleable METHOD: SM 2540F						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/28/2009

TEST: Residue, Suspended	METHOD: SM 2540D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/30/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00003038004

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B

Station No.:

EMORY001.9RO

Date/Time Collected:

10/27/2009 10:18

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: **TDEC-WPC** TDEC-WPC

Priority Date:

11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

Field Determinations

:Hq

7.79

pH Units

Chiorine, residual:

Conductivity:

57

uMHO

mg/L

Temperature:

12.63

Dissolved Oxygen: 11.35

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME ⁻					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	20	mg/L	3.8	10	M Chen	11/3/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	19	mg/L	0.7	1	M Chen	11/2/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	0.1	ml/L	0.10	0.10	P Leathers	10/28/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	33	mg/L	10	10	A Peeples	10/30/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003038005

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 1.7

Project Site No.:

Station No.:

EMORY001.7RO

Date/Time Collected:

10/27/2009 10:30

Sampler's Name:

Geoff Klein

County: Sample Matrix: **ROANE - 73**

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: **Priority Date:**

TDEC-WPC TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

Field Determinations

:Hq

7.56

pH Units

uMHO

Chlorine, residual:

Conductivity: Temperature:

57

13.11 Dissolved Oxygen: 11.49

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total METHOD: EPA 310.2							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	20	mg/L	3.8	10	M Chen	11/3/2009	

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	20	mg/L	0.7	1	M Chen	11/2/2009	

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS MDL		MQL	ANALYZED BY:	DATE
Settleable Residue	0.1	ml/L	0.10	0.10	P Leathers	10/28/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	15	mg/L	10	10	A Peeples	10/30/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003038006

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY000.1RO

Date/Time Collected:

10/27/2009 10:45

Sampler's Name: County:

Geoff Klein **ROANE - 73**

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 **TDEC-WPC**

Agency Invoiced: Priority Date:

TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

Field Determinations

pH:

7.52

pH Units

Chlorine, residual:

Conductivity:

86

13.47

Temperature: **Dissolved Oxygen: 10.65**

mg/L

uMHO

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	51	mg/L	3.8	10	M Chen	11/3/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	43	mg/L	0.7	1	M Chen	11/2/2009

TEST: Residue, Settleable	METHOD: SM 2540F				,	
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/28/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/30/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003038007

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Clinch River mile 2.3

Project Site No.:

Station No.:

CLINC002.3RO

Date/Time Collected:

10/27/2009 11:03

Sampler's Name:

Geoff Klein

County: Sample Matrix: **ROANE - 73**

Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC

Billing Code:

327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

Field Determinations

pH:

7.58

pH Units

Chlorine, residual:

Conductivity:

202 14.01 **uMHO**

Temperature: **Dissolved Oxygen: 9.44**

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	96	mg/L	3.8	10	M Chen	11/3/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	79	mg/L	0.7	1	M Chen	11/2/2009	

TEST: Residue, Settleable	ST: Residue, Settleable METHOD: SM 2540F							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/28/2009		

TEST: Residue, Suspended	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/30/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003038008

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

Project Site No.:

5-FD

Station No.:

Date/Time Collected:

CLINC002.3RO-FD

Sampler's Name:

10/27/2009 11:03 Geoff Klein

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC

Send Report To:

327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

Field Determinations

pH:

7.58

pH Units

Chlorine, residual:

Conductivity:

202

uMHO

Temperature:

14.01 **Dissolved Oxygen: 9.44**

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	99	mg/L	3.8	10	M Chen	11/3/2009

TEST: Hardness, Calcium	m METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	81	mg/L	0.7	1	M Chen	11/2/2009	

TEST: Residue, Settleable METHOD: SM 2540F						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/28/2009

TEST: Residue, Suspended	WE.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/30/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003038009

Project Name: Sample Description: TVA-Ash Spill

Sampler Project Name: TVA Ash Spill

Clinch River mile 2.3

Project Site No.:

Station No.:

5-FB

CLINC002.3RO-FB

Date/Time Collected: Sampler's Name:

10/27/2009 11:03

County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To:

327.34-20 **TDEC-WPC** TDEC-WPC

Agency Invoiced: **Priority Date:**

11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

Field Determinations pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other: Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	U	mg/L	3.8	10	M Chen	11/3/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	U	mg/L	0.7	1	M Chen	11/2/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/30/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003038010

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA discharge point

Sampler Project Name: TVA Ash Spill

Project Site No.:

5A

Station No.:

KingAshOutF2

Date/Time Collected:

10/27/2009 11:20

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 **TDEC-WPC**

Agency Invoiced: **Priority Date:**

TDEC-WPC 11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

TEST: Alkalinity, Total	ME ⁻	THOD: EPA 31				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	22	mg/L	3.8	10	M Chen	11/3/2009

Field Determinations

Dissolved Oxygen: 11.85

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other:

Flow:

7.67

65

12.95

pH Units

uMHO

mg/L

CFS

TEST: Hardness, Calcium	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	25	mg/L	0.7	.1	M Chen	11/2/2009

TEST: Residue, Settleable	ME	METHOD: SM 2540F				
ANALYTE	RESULT	RESULT UNITS MD		MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/28/2009

TEST: Residue, Suspended	ST: Residue, Suspended METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/30/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003038011

Project Name:

TVA-Ash Spill

VA-ASH Spill

Sample Description: Clinch River m Sampler Project Name: TVA Ash Spill

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Field Determinations

Dissolved Oxygen: 9.76

Conductivity:

Temperature:

7.39

222

14.13

pH Units

uMHO

mg/L

CFS

:Hq

Other:

Flow:

Project Site No.:

6

Station No.:

CLINC004.5RO

Date/Time Collected:

10/27/2009 10:50

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:
Billing Code:

TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC TDEC-WPC

Agency Invoiced: Priority Date:

11/06/2009

Date/Time Received:

10/27/2009 12:55

Received By:

Ken Hitchman

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	120	mg/L	3.8	10	M Chen	11/3/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	92	mg/L	0.7	1	M Chen	11/2/2009

TEST: Residue, Settleable METHOD: SM 2540F						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/28/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/30/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit